

Abstract

The present invention is a wavelength-selective optical transmission system that includes a first waveguide for transmitting a multiplexed optical signal therethrough. The system further includes a second waveguide coupled to the first waveguide wherein a least one of the first and second waveguides have a set of wavelength-selective Bragg gratings disposed near a coupling section between the first and second waveguides to reflect a reflecting optical signal back to the first waveguide and for transmitting a contra-directional optical signal and a co-directional optical signal having respectively a contra-directional selected wavelength and a co-directional selected wavelength corresponding to the Bragg gratings. One of the contra-directional and co-directional wavelengths is chosen as a designated wavelength, and the reflecting optical signal and one of the contra-directional or co-directional optical signals are outside of a predefined range surrounding the designated wavelength.